

Raptor Habitat Enhancement and Stream Improvements

Family Support Complex
Naval Station Everett
Marysville, Washington

1) Location of Project

The proposed project is located in and along a modified stream course along the western and southern boundary of the Family Support Complex (FSC) in Marysville, Washington. This unnamed Type 4 watercourse is a tributary to Middle Fork Quilceda Creek (WRIA 07.0058). Middle Fork Quilceda Creek, a tributary to Quilceda Creek (WRIA 07.0044), is a known chinook and coho salmon spawning stream (SCPDS 1999; U.S. Navy 1998; pers. observations).

The stream is approximately 4-6 feet across along the western side of the FSC. Beavers have partially dammed the stream along the south side, creating widths from 6-15 feet. The stream averages about 1.5 feet in depth and a flow of approximately 2-3 cubic feet was noted in May 1998 (U.S. Navy 1998). The stream has a sandy/silt substrate and is lined and partially filled with aquatic vegetation such as cattails and reed canary grass. Both banks of the stream have been highly modified by agriculture and the building of the FSC, resulting in a loss of tall riparian vegetation. However, since 1998, the Navy has worked closely with Snohomish County and local community groups to plant native species of shrubs and trees along the riparian corridor, and removed trash and debris from the stream channel. The most recent community riparian planting project took place on March 3, 2001.

There are no barriers preventing adult salmon from reaching the stream at the FSC. Due to a lack of suitable spawning substrate, adults probably do not use the stream. Juvenile coho salmon and juvenile cutthroat trout are known to use the stream, however (D. Ward, pers. comm. 2001).

2) Description of Project

This habitat enhancement project has three components (see attached plan for location of each component):

- a) Install four raptor poles: a recent bird survey of the stream corridor (U.S. Navy 1998) did not find any raptors (hawks, eagles, falcons, etc.), although nearby fields provide foraging habitat for birds that prey on small mammals. This has been attributed to a lack of suitable perching poles in the general vicinity of the FSC (J. Jacobson, pers. comm. 2001; A. Boyce, pers. comm. 2001). Lacking bird predators, voles and mice

have damaged riparian plantings at the FSC. Voles and mice damage and often kill young shrubs and trees by girdling (stripping) the bark from the stems of the plants. The installation of four raptor perch poles of varying heights will provide a natural control of these small mammals, resulting in a reduction of damaged plants. An added benefit will be the increased bird-watching enjoyment from the Navy community and the general public.

The four poles will be supplied by NAVRADSTA (T) Jim Creek and will be solid alder tree trunks that have blown over or are deemed hazards. The heights of the poles above ground will range from 8 feet to 20 feet (see attached photo of a typical pole installation). Red-tailed hawks, Northern harriers, and possibly owls, all predators of small mammals, are expected to use the perch poles (D. Ward, pers. comm. 2001). A mechanized auger will be used to drill holes for the placement of the poles. Care will be taken to minimize damage to riparian plants; any damage will be repaired.

- b) Clear non-native plant species, such as blackberries and Scot's broom, from the riparian corridor of the stream: fast-growing, non-native Himalayan blackberries and Scot's broom are colonizing the open areas along the stream, shading out the recent plantings of native shrubs and trees. If left alone, these invasive species will quickly spread to wide areas along the stream. Removal of these species will allow the previous planting efforts to succeed. Work will be accomplished using a hand-held "weed-wacker" and/or machetes.
- c) Place large woody debris (LWD) in the stream along the south side of the FSC: LWD enhances fish habitat by providing resting and hiding cover for juveniles and by trapping organic leafy materials that attracts insects, which, in turn, provides food for juvenile fish. LWD also provides perches for birds, amphibians, and reptiles.

The LWD will consist of 3 root wads from either alders, cedars, or hemlock trees and will be supplied from NAVRADSTA (T) Jim Creek from trees that have blown over or are deemed hazards. The root wads will be placed using a backhoe or other mechanical means; care will be taken to minimize impacts to the riparian vegetation; any damage will be repaired.

3) Describe how this project will benefit resources potentially affected by oil spills.

The project's three components will benefit fish and wildlife by promoting the healthy growth of native riparian plant species along the stream that have been impacted by mice, voles, and invasive non-native plants, and by enhancing habitat for aquatic species.

The benefits of maintaining the plantings along the stream include:

- healthy riparian plants will grow to provide shade and organic material to the stream, benefiting fish and shading out detrimental species like reed canary grass;
- healthy riparian areas attract birds and mammals, providing a more natural ecosystem in an otherwise degraded area;

- healthy riparian areas provide a buffer from some man-made impacts, such as fertilizers and pesticides from agriculture or landscaping activities.

The benefits of adding LWD to the stream are:

- LWD enhances fish habitat by providing resting and hiding cover for juveniles;
- LWD enhances fish habitat by trapping organic leafy materials that attracts insects, which, in turn, provides food for juvenile fish;
- LWD slows stream velocities, minimizing bank erosion and siltation of downstream salmon habitat.

4) Describe the goals and measurable objective of this project. How will success be measured?

The overall goal of the project is to improve stream habitat for salmonids. The objectives are to: 1) increase the survival rate of recent riparian plantings by removing predators and invasive species; and 2) improve in-stream habitat by adding LWD.

Success will be measured by: 1) counting raptors that use the perch poles; 2) counting plant survival rates; 3) counting salmonid species around each LWD; 4) counting other species that utilize the LWD for perches, such as amphibians, reptiles, or birds.

5) What is the estimated duration of this project?

The project will take place during the late summer of 2001, during the dry period when stream flows are low. The project is estimated to take three days: two days to acquire, transport, and prepare poles and root wads; one day to perform the work.

6) What is the estimated cost of this project?

Crewmembers from the U.S.S. Lincoln will provide the labor. Members of NAVSTA Everett Environmental Division will plan and oversee the work. Tools and mechanized equipment will be provided from Navy assets. Trees for the raptor poles and LWD will come from Navy property at NAVRADSTA (T) Jim Creek.

7) For projects involving habitat restoration/acquisition:

- a) What is the approximate acreage of the area to be restored?
Approximately 0.3 acres will be worked during the project duration.
- b) What is the current ownership of the area to be restored?
The Department of the Navy owns the land to be restored.
- c) Please attach a map showing the location where the restoration project will take place.
See attached map.

References

- Boyce, A. Personal communication. 2001. Volunteer coordinator, Stilly-Snohomish Fisheries Enhancement Task Force. Everett, Washington.
- Jacobson, J. Personal communication. 2001. Watershed steward, Snohomish County Public Works, Surface Water Management. Everett, Washington.
- Ward, D. Personal communication. 2001. Habitat restoration manager, Stilly-Snohomish Fisheries Enhancement Task Force. Everett, Washington.
- Snohomish County Planning and Development Services (SCPDS). 1999. Snohomish County chinook and coho salmon distribution maps.
- Snohomish County Public Works (SCPW). Carroll, J.R., project manager. 1998. Quilceda/Allen watershed management plan technical supplement. Snohomish County Public Works, Surface Water Management. Everett, Washington.
- U.S. Navy. 1998. Proposed Navy Mitigation Project. Prepared by K. Livezey and D. Smith. EFANW. Poulsbo, Washington.

Typical Raptor Perch

